Infertility and Fertility Intentions, Desires, and Outcomes among U.S. Women

Abstract

Little is known about how the experience of infertility or identification as someone with infertility shapes women's fertility intentions, desires, or birth outcomes. Using a national sample of American women of reproductive age, we assess how fertility and parity status is associated with fertility intentions and desires, as well as how fertility and parity status at one time point predict birth three years later. We find that infertility is associated with lower fertility intentions. However, women who have experienced infertility and identify as a person with infertility express greater desires to have a baby and a higher ideal number of children. Surprisingly, we find that they are also significantly more likely to give birth between waves. These findings have important theoretical implications for our understanding of the meaning of intentions for those who think the outcomes are uncertain, as well as for empirical research on fertility.

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Demographers interested in fertility trends and projections have long considered the role of infertility, particularly in analyses of developing countries (see Rutstein & Shah, 2004). When surveyed about infertility, the lay public also understands the term, "infertility," to mean a permanent inability to give birth (Maill, 1994). Yet the medical definition of infertility, 12 months or more of unprotected, heterosexual intercourse without conception (ASRM, 2008), sometimes referred to as subfecundity, does not indicate permanent involuntary childlessness. The proportion of women who experience infertility – 7% - 15.5% to in a given year depending upon measurement (Thoma, McLain, Louis, King, Trumble, et al., 2013) and 51.8% at some point throughout their reproductive lifespan (Greil, McQuillan, Lowry, & Shreffler, 2011) is substantial, but little is known about how the experience of infertility or identification as someone with infertility shapes women's fertility intentions and desires. Further, it is not known how infertility affects birth outcomes in countries such as the U.S. where over 10% of all women trying to become pregnant seek medical treatment for infertility (Simonsen, Baksh, & Stanford, 2012). In this paper, we focus on one aspect of the dialectical relationship between infertility and fertility. Individual fertility behaviors, fertility patterns, and fertility policies at the population level shape individuals' and couples' experiences of and responses to infertility at the same time that actors' fears of infertility and decisions about how to respond to failures to conceive may influence fertility intentions, desires, and outcomes. Yet scant research has examined these relationships. Using the National Survey of Fertility Barriers, we explore the associations between infertility and fertility intentions, desires, and ideal number of children among U.S. women ages 25-45 by fertility status (not infertile, medically infertile, self identifying as infertile without meeting the medical definition of infertility, and self identifying as infertile with

experience of infertility) and parity (childless and having one or more children). We further examine how infertility and parity predict the likelihood of a birth in the three waves between interviews.

Theoretical Framework

Infertility is an interesting phenomenon for fertility researchers and theorists to consider because it calls into question the meaning of fertility intentions when the outcomes are uncertain, especially within a particular timeframe. Theoretical conceptualizations of intentions suggest that they are shaped by the desire for a particular outcome, a belief that taking an action will result in that desired outcome, and a commitment to perform the action (Malle, Moses, & Baldwin, 2003). Women who have experienced infertility may not believe that taking an action (e.g., stopping contraception, predicting ovulation) will result in pregnancy. Yet experience of infertility alone may not be enough to influence intentions. It may require conscience processing of this experience. Women who have given thought to their fertility experiences and have come to realize that they have trouble becoming pregnant may be particularly susceptible to influences of infertility on their fertility intentions. McQuillan et al. (2014) suggest a stronger emphasis on identity is needed in studies of fertility intentions in addition to the more structural (i.e. life course) and cultural (i.e. values) approaches often used. Though they focused on motherhood identity, we suggest that identifying as infertile may be another salient identity in the study of fertility intentions.

The uncertainty of the outcome following infertility raises interesting questions about fertility intentions. What do intentions mean, therefore, for women who may strongly want to give birth but are uncertain about their ability to be able to do so? Do they report strong intentions (e.g., very sure that they intend to give birth), or do they downgrade or downplay their

intentions even if they might be trying to get pregnant? Do they reduce their intentions, and possibly their preferred number of children, to meet their expectations of lowered fertility? And finally, are infertile women able to have children that they want to have, or does their prior infertility experience predict lower likelihood of a birth?

Methods

Sample

Our data come from the National Survey of Fertility Barriers (NSFB), a random digit dialing telephone survey of 4,712 women of childbearing ages (25 to 45) and a subset of their husbands/partners. The study was designed to assess social and health factors related to reproductive choices and fertility for U.S. women. The first wave was collected in 2004-2006, and the second three years later. The data are nationally representative, with an oversample of Black and Hispanic women and women with fertility problems. Analyses for this study are weighted to account for the oversamples. Our sample for fertility intentions and desires analyses is restricted to 4,377 women who are not surgically sterilized or in a heterosexual marriage or cohabiting relationship with a man who has been surgically sterilized. Our sample for the analysis examining birth odds by infertility and parity status includes 1,586 women from the first sample who participated in the wave 2 interview.

Measures

Dependent variables. The first dependent variable, *Fertility intentions,* is based on two questions that are combined to create an ordinal measure of fertility intentions. Respondents were asked, "Do you intend to have a baby?" and "Of course, sometimes things do not work out exactly as we intend them to, or something makes us change our minds. In your case, how sure

are you that you will/will not have a child?" Responses were coded so that low scores indicate, "Very sure do not intend" (-2) to high scores of "Very sure do intend" (+2). Women who said they "don't know" their intentions, who said they cannot have children, or who said they would let God or nature decide are coded 0 (the center of the scale). These questions are similar to those used in the National Survey of Families and Households; we recoded the response categories so that a positive score indicates intending and a negative score indicates not intending to have a baby. Another dependent variable, *Want a baby*, is measured by a question asking, "In the future, would you like to have a(nother) baby?" Responses are coded from 1 (definitely no) to 4 (definitely yes). *Ideal number of children* was measured by asking, "How many children would you consider to be ideal for you?" and coded from 0 to 5, with 5 including preferences of 5 or more children. *Gave birth* is an indicator variable where 1 means that the respondent gave birth between waves.

       Infertility and parity groups. We categorized women as *Medically infertile* if they had ever had a period of 12 months or more during which they had unprotected heterosexual intercourse. We considered women to be *Self-identifying as infertile* if they answered "yes" to either: "Do you think of yourself as someone who has, has had, or might have trouble getting pregnant?" or "Do you think of yourself as someone who has or has had fertility problems?" Three distinct groups were created: women who were medically infertile but did not self-identify as infertile; women who did not meet the medical criteria for infertility but did identify as infertile, and women who both met medical criteria and self-identified as infertile. A fourth group of non-infertile women were also included in the study. These four groups were further split by parity, comparing women who were childless to women who had at least one biological child.

Sociodemographic control variables. *Age* is a continuous variable and ranges from 25 to 45 in our sample. *Married* was measured by a question about marital status, with 1 indicating that the respondent was married at the time of the interview. *Cohabiting* was coded by either a voluntary response to the marital status question or a "yes" to a follow-up question, "Are you currently living with a romantic partner?" *Education* (in years) is a continuous variable, ranging from 2 to 22 in our sample. Race/ethnicity is included as dummy variables for *Black*, *Hispanic*, and "*Other race*," with *White* respondents as the reference category.

Results

Preliminary results indicate that infertility experience and identity shape fertility intentions and desires in interesting ways. The means and percentages of fertility intentions, desires for a baby, and ideal number of children are provided in Table 1 by infertility and parity group. Findings reveal that women who are not infertile and childless have the highest fertility intentions; all other groups had negative scores on the intentions variable, indicating that average response was a "no" to the question on intentions. The desire and ideal variables reveal a different pattern, however. Childless women in every group had higher scores for wanting to have a baby, but the score for infertile women who identify as infertile had the highest mean score (M=3.27). Similarly, when asked how many children would be ideal for them, women who already had at least one child reported more children as ideal, but among the childless, infertile women without children reported the highest ideal number (M=2.42).

Regression analyses, presented in Table 2, indicate similar patterns. Regardless of fertility status, all women with one or more children reported significantly lower intentions than non-infertile women with no children. All women with children also report less desire to have a

baby than non-infertile women with no children. Women who have experienced infertility and identify as infertile, however, report significantly greater desire to have a baby. The patterns for ideal number of children differ, with all women who already had at least one birth by wave 1 to report a higher ideal number of children for themselves. Infertility experience and self-identifying as infertile is not associated with ideal number of children unless women have both experienced infertility and think of themselves as a person with fertility problems; they report significantly more children to be ideal for them. In a separate multiple classification analysis (MCA) not shown here, women with infertility experience who also identify as infertile prefer 3.16 children on average, compared to 2.80 among the non-infertile childless women.

A preliminary lagged dependent variable analysis was conducted to determine how fertility and parity status group predicted the odds of a birth between waves. Interestingly, though the non-infertile childless group reported the highest fertility intentions at wave 1, childless women who experienced infertility and identified as infertile were more than twice as likely to give birth between waves (OR = 2.37). Additionally, women who self-identify but do not meet medical criteria for infertility who already had at least one birth by wave 1 were more likely to give birth between waves (OR = 2.16), whereas women who meet the medical criteria for infertility but do not identify as infertile were nearly 70% less likely to give birth between waves (OR = .32). Additional analyses using wave 2 data are planned to further explore changes in fertility and parity statuses to determine if changes in status are associated with changes in fertility intentions, desires, and outcomes.

Discussion

Despite a growing body of literature on infertility/subfecundity in demographic and social science fields, little is known about the associations between infertility and fertility intentions, desires, and birth outcomes. Further, extant research typically fails to differentiate between those who meet the medical criteria but do not realize they are infertile, those who perceive themselves to have a fertility problem although they do not meet the medical criteria for infertility, and those who both meet the medical criteria and identify as having a fertility problem. A few exceptions are Greil and colleague's work on the "hidden infertile" (Greil, McQuillan, Johnson, Blevins-Slauson, & Shreffler, 2009) and the link between perceiving a fertility problem and distress about infertility (Greil, Shreffler, Schmidt, & McQuillan, 2011). The findings presented here highlight the importance of both the experience of infertility and the identification as a person with fertility problems for fertility intentions, desires, and outcomes. Supporting intentions theories that suggest that an outcome needs to be certain to formulate an intention (Malle et al., 2003), we found that fertility intentions were highest for women who had never experienced infertility and were childless at the time of the first interview. Taken on face value, this might suggest that women who experienced or perceived infertility are not trying to get pregnant. Yet when we explored fertility desires further, we found that women who have both experienced infertility and identify as someone with a fertility problem report significantly greater desires to have a baby. They also have a much higher ideal number of children than other childless women in the sample. Of course, simply wanting a birth may not predict one, especially for women who have met the medical criteria for infertility in the past. Surprisingly, however, when we investigated births between the two waves of data collection, we found that women who had experienced infertility and perceived themselves to have a fertility problem actually had the highest proportion of women giving birth of any fertility and parity status group, and they

were significantly more likely to give birth than women who were childless and had not experienced infertility.

These findings suggest that fertility intentions may not be the best predictors of births for women who have experienced infertility and identify as someone with fertility problems. The uncertainty of whether or not they will be able to give birth may prevent them from reporting a strong intention to have a baby. Bachrach and Morgan (2013) have called for greater theory development "…at the intersection of cognitive science, social science, and social demography" (p. 480) to better understand fertility intentions and their realization. In particular, they argue that fertility researchers need improved understanding of how mental and social phenomena are related to intentions (Bachrach & Morgan, 2013). This study provides an example of when intentions may not be as meaningful or predictive for fertility outcomes. Because of the substantial minority of women who experience infertility each year, this has important implications for fertility research.

In sum, infertile women are a special case for fertility intentions and fertility research. Women with fertility problems appear to have lower intentions despite wanting to have a baby, and they appear to be "missing the target" since they have greater odds of giving birth despite their lower intentions. This study highlights the importance of identity and experience in the formation of fertility intentions, and it suggests the need for more in-depth probing of fertility plans for some groups, such as women who have experienced infertility. Simply asking these women if they intend to give birth may be an inadequate question.

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Tables

Table 1. Means or percentages of dependent and sociodemographic variables by fertility and parity status group, N=4,377.

Variables	Not infertile Childless M or %	Not infertile 1+ child M or %	Medically infertile Childless M or %	Medically infertile 1+ child M or %	Self ID infertile Childless M or %	Self ID infertile 1+ child M or %	Infertile and ID Childless M or %	Infertile and ID 1+ child M or %
Intentions and desires								
Fertility intentions	.12	-1.08	-.08	-1.12	-.20	-1.14	-.05	-.97
Want to have a baby	2.84	1.94	2.83	1.98	2.72	2.18	3.27	2.25
Ideal no. of children	1.97	2.90	1.96	2.99	1.82	2.91	2.42	2.98
Birth between waves	22%	23%	10%	12%	25%	24%	27%	14%
Sociodemographic variables								
Age	32.93	35.59	34.21	35.42	34.89	37.53	35.73	36.64
Married	34%	73%	40%	62%	36%	56%	54%	71%
Cohabiting	14%	9%	17%	12%	11%	15%	15%	8%
Education	15.67	13.44	14.82	13.01	14.84	13.26	14.07	13.37
Black	11%	11%	11%	22%	9%	12%	17%	15%
Hispanic	8%	21%	13%	23%	13%	23%	12%	16%
Other race/ethnicity	10%	6%	18%	5%	12%	15%	11%	5%
N	682	1,530	133	879	108	151	240	654

Table 2. Linear regression analyses of the association between fertility and parity status, sociodemographic variables, and fertility intentions and desires, N=4,377.

Variables	Fertility Intentions B		SE	Want to have a baby B		SE	Ideal no. of children B		SE
Fertility and parity status									
Not infertile, 1+ child	-.78	***	.07	-.57	***	.06	.77	***	.06
Medically infertile, childless	-.01		.15	.09		.13	-.14		.13
Medically infertile, 1+ child	-.63	***	.11	-.24	*	.10	.89	***	.10
Self ID, childless	-.04		.13	.11		.11	-.02		.12
Self ID, 1+ child	-.84	***	.08	-.56	***	.07	.88	***	.07
Infertile and ID, childless	.19		.11	.73	***	.09	.32	**	.10
Infertile and ID, 1+ child	-.54	***	.08	-.15	*	.07	.86	***	.07
Sociodemographic variables									
Age	-.10	***	.00	-.07	***	.00	-.01	**	.00
Married	-.09		.05	-.15	**	.05	.15	**	.05
Cohabiting	-.01		.07	-.05		.06	.01		.06
Education	.04	***	.01	.03	***	.01	-.04	***	.01
Black	.09		.06	-.06		.05	-.03		.05
Hispanic	.18	**	.05	.10	*	.05	.11	*	.05
Other race/ethnicity	.32	***	.08	.25	***	.07	-.03		.07
Intercept	2.71	***	.17	4.62	***	.15	2.82	***	.15

***p<.001; **p<.01; *p<.05.

Table 3. Logistic regression of birth between waves by fertility and parity status and sociodemographic variables, N=1,586.

Variables	OR		SE
Fertility and parity status			
Not infertile, 1+ child	1.198		.25
Medically infertile, childless	2.082		.44
Medically infertile, 1+ child	1.801		.44
Self ID, childless	.362	*	.54
Self ID, 1+ child	.675		.32
Infertile and ID, childless	2.074	*	.36
Infertile and ID, 1+ child	.859		.32
Sociodemographic variables			
Age	.820	***	.02
Married	6.177	***	.29
Cohabiting	2.263	*	.37
Education	1.128	***	.03
Black	.875		.31
Hispanic	1.231		.28
Other race/ethnicity	.993		.27
Intercept	6.684	*	.75

***p<.001; **p<.01; *p<.05.